

We have in this jaw a diastema unlike that of any known macropod, but having its greatest similitude in *Sthenurus*. It is in the latter genus again that we find some approach to the greatly dilated incisor in the mandible before us. It has already been observed that the symphysis is that of *Sthenurus* rather than of *Macropus* on the one hand, or of the more aberrant macropod, *Procoptodon*, on the other. Concomitant with these indications of alliance with *Sthenurus*, we find however, a premolar departing from all others of the family. It seems, therefore, reasonable to surmise that *Palorchestes* was on the whole a true saltigrade of the macropodal type, and that the point of divergence whence its differentiation commenced, was *Sthenurus* or some form closely allied to it. The use to which the determination of such relationship may be put, is best known to those who have to deal with the disconnected bones of the numerous extinct species of kangaroos; without its guidance their identification, always doubtful in some degree, becomes the most unsatisfactory guess-work.

SYNONYMY OF AUSTRALIAN AND POLYNESIAN LAND AND MARINE MOLLUSCA.

BY J. BRAZIER, C.M.Z.S., &c., &c.

1. PATELLA ACULEATA.

Patella aculeata, Reeve, Conch. Icon., pl. 32, sp. 90.

„ *squamifera*, Reeve, Coc. cit., sp. 94.

„ *aculeata*, Angas, Proc. Zool. Soc., p. 221, 1867.

„ *squamifera*, Angas, loc. cit., p. 221, 1867.

„ *aculeata*, Tenison-Woods, Proc. Roy. Soc. Tas., p. 22, 1877,

Hab.—Port Jackson near the Heads, and outside from the Clarence River on the north, to Twofold Bay on south; it is also found in Tasmania.

I have had some hundreds of specimens of the so-called species *squamifera*, but I can only identify them with *aculeata*. The very rough sculptured variety is of very common occurrence at the Old

Man's Hat, on the inner North Head of Port Jackson. The squamately ribbed depressed species of Mr. Reeve and Mr. Angas, are only the young and depressed species of *aculeata* of still very young specimens. Many hundred species might be invented from examples selected from the rocks all along the coast of New South Wales

2. NATICA INCEI.

Natica Incei, Philippi, Proc. Zool. Soc., p. 233, 1851, in Chem. Conch. Cab., Küster's ed., p. 142, pl. 19, fig. 5, 1852.

Natica Incei, Reeve, Conch. Icon., pl. 10, sp. 37, 1855.

„ *Baconi*. Reeve, loc. cit., pl. 20, sp. 89.

„ *fibula*, Reeve, loc. cit., pl. 27, sp. 130.

„ (*Neverita*) *baconi*, Angas, Proc. Zool. Soc., p. 167, 1865.

„ (*Lunatia*) *incei*, Angas, Proc. Zool. Soc., p. 90, 1871.

Hab.—Outer Manly Beach, Newcastle, Port Stephens, Manning, Macleay, and Nambuccra Rivers, Port Macquarie, Bellinger, Clarence, and Richmond Rivers, found on all beaches near the mouths of the above rivers and ports. Victoria and South Australia.

This very fine and well-known species was first described by Philippi in the Proceedings of the Zoological Society of London, 1851, and well figured in 1852, by Philippi in Martini and Chemnitz, second edition by Küster; then Reeve in 1855, gives it a new name as *Incei*, species 89. At species 37, he finds another large specimen in the Cumingian collection from South Australia, and being a little more conical than the *Incei* of Philippi, found on the east coast of Australia, Mr. Reeve, pen in hand, describes, figures and names it *Baconi*, only, I believe, to gratify Mr. Cuming. At species 130, in Reeve's Conch. Icon., he also figures the small form under another name as *fibula*, this is the most common form found on the beaches near the Bellinger River Heads, on sandy mud, well up from the sea break. The large specimens are found on the sand flats, close to the sea break. The extensive series that I have from all the above localities, convinces me that they are all of one species.

3. CANCELLARIA UNDULATA.

Cancellaria undulata, Sowerby, Conch. Illust., No. 15., pl. 10, fig. 16 only. Proc. Zool. Soc., p. 136-7, 1848; Thes. Conch., vol. ii., p. 443-4, pl. 92, fig. 12; pl. 95, fig. 79. Reeve Conch. Icon., vol. x., pl. 3, sp. 9, 1856; Crosse, Journal de Conch., third series, vol. ix., No. 43, p. 235, 1861; Angas Proc. Zool., Soc., p. 171, 1865. *Cancellaria granosa*, Angas. Proc. Zool. Soc., p. 208, 1867. *Cancellaria undulata*, Ten-Woods, Proc. Roy. Soc. Tas., p. 7, 1877.

Hab.—Middle Harbour, Sow and Pigs Reef, Port Jackson, Broken Bay, Port Stephens, Newcastle, Bellinger River, and all beaches between that river and the Clarence River Heads (*Brazier*).

There has been a great deal of confusion caused by one author and another in reference to the specific name and true locality of this species; first when it was figured in the Conchological Illustrations by Mr. Sowerby, he had two species before him and he named them as one, under the name of *granosa* in the Proceedings Zool. Society, 1848; he then points out that *undulata* was originally included with *granosa* in the Thesaurus; he also distinctly says "we separate the shell represented in the Conchological Illustrations, figure 16, as *undulata*, from Van Dieman's Land." Reeve, on the authority of Cuming gives Tasmania; the Rev. Tenison-Woods says the species is not known to the Tasmanian naturalists. Mr. Angas, in Molluscan Fauna of South Australia, Proc. Zool. Soc., 1865, quotes *undulata* from there, and says that it is very closely allied to *C. granosa*. So far Mr. Angas is wrong; *undulata* is confined to the coast of New South Wales, or in other terms, the east coast of Australia; the *granosa* is confined to the south-east and south coast of Australia. Mr. Angas, in the Proc. Zoological Soc, 1867, gets into still greater confusion when he persists in calling the *C. undulata*, *C. granosa*, and quotes Sowerby's Conch. Ill., figs. 16 and 17, in which fig. 17 is really *C. granosa*.

It was only recently, when going through the Cancellariidæ in the Hargraves Collection in the Museum, that I was astonished to

see specimens of *C. undulata* named *granosa*, Port Jackson, and *granosa* named *undulata*, South Australia. Of some hundred of *undulata* that I have seen, and in my late wife's collection, all are named by Mr. Angas *granosa*. We have for many years sent them away to our conchological friends in England and Europe as *granosa*, but now find that we have been deluded by authors. I hope this short note on *C. undulata* will be of some use in the future, and put an end to this confusion of names. Reeve and Cuming, to make matters more complicated, have given a locality of their own invention—Peru, South America—for *undulata*. M. Crosse, in *Journal de Conch.*, also follows with Reeve and Cuming's locality.

4. TURRITELLA SOPHIÆ.

Turritella incisa, Tenison-Woods (non Reeve), *Proc. Linn. Soc. N.S.W.*, vol. ii., p. 262, 1877.

Hab.—Off Port Jackson Heads, 45 fathoms (Brazier).

The name *incisa* is preoccupied by Reeve in *Conch. Icon.*, pl. xi., sp. 65, 1849; also from Sydney in deep water, by Strange. I therefore name the species after my late wife, who was a devoted student of conchology for twenty-three years.

5. TUGALIA INTERMEDIA.

Parmophorus intermedius, Reeve, *Proc. Zool. Soc.*, p. 50, 1842, *Conch. Syst.*, vol. ii., pl. 139, figs. 5-6. *Tugalia intermedia*, A. Adams, *Proc. Zool. Soc.*, p. 88, 1851. *Tugalia cinerea*, Sowerby, (non Gould), *Thes. Conch.*, vol. iii., p. 221, *Thes.*, pl. 249, figs. 15-17. *Tugalia ossea*, Sowb. (non Gould), *loc. cit.*, fig. 18. *Tugalia ossea*, Angas (non Gould) *Proc. Zool. Soc.*, p. 219, 1867. *Tugalia cinerea*, Reeve (non Gould), *Conch. Icon.*, vol. xvii, pl. 1, sp. 5 a b. *Tugalia Australis*, Tenison-Woods, *Papers and Proc. Roy. Soc. Tas.*, p. 21, 1877.

Hab.—Philippine Islands? (Cuming, Reeve), Port Jackson, New South Wales, from low water to 18 fathoms (*Brazier*), Victoria (*Bailey*), Tasmania (*Ten.-Woods*).

I have four specimens of a *Tugalia* from the Chatham Islands — *Tugalia elegans*, Gray, and identical with our Port Jackson *T. intermedia*; all the specimens of *Tugalia parmophoidea*, of authors that I have seen from New Zealand are *T. elegans*, Gray, they in no way correspond with *Tugalia parmophoidea*. Quoy and Gaimard, from New Holland (South Australia), evidently *Tugalia Tasmanica*, Ten.-Woods, Proc. Roy. Soc. Tasmania, p. 28, 1876, is only a variety of Quoy and Gaimard's species, as he says his description was drawn up from a single example. Neither do Reeve or Sowerby figure Gould's species of *Tugalia*, see Otia Conchologica, p. 12-13, 1862, and the Expedition Shells, 1846.

6. COLUMBELLA TAYLORIANA.

Columbella Tayloriana, Reeve, Conch. Icon., vol. xi., pl. 35, fig. 5, 1859. *Albomaculata*, Angas, Proc. Zool. Soc., p. 111, pl. 13, fig. 5, 1867.

Hab.—North-west Australia? (*Reeve*), Port Jackson (*Angas*). Broken Bay, Port Stephens, Port Macquarie, Bellinger, Clarence and Nambuccra Rivers, and all intermediate bays and beaches between those rivers (*Brazier*).

This very pretty species is very often found under stones in Port Jackson and among the rocks at Bondi and Coogee Bays, after passing north from Sydney the specimens become much larger and more numerous at the localities given above. I very much doubt the locality given by Reeve of north-west Australia. I have not seen any species like it from there.

7. HELIX (DISCUS) THORPEIANA.

Helix (Discus) ceralis, Cox (non Crosse) Proc. Zool. Soc. p. 147, pl. 16, fig 1; 1873. Pfeiffer, Mon. Helv. Viv. Vol. VII., p. 399. Nomenclator, Helv. Viv., p. 179.

Hab. Solomon Islands.

The specific name of Crosse having priority for a species described in 1868, from New Caledonia, name changed as above.

8. HELIX (PAPUINA) WALLERI.

Helix brencchleyi, Angas (non Brazier) Proc. Zool. Soc., p. 861, pl. 54, fig. 7, 1878.

Hab.—Ysabel Island ; Solomon Group (Branchley and Brazier.)

My specific name of *Branchleyi* having priority for a species described in the Proc. Linn. Soc. of N.S.W., Vol. 1, 1875-6. See Pfeiffer, Mon. Helv. Viv., Vol. VIII., p. 582, 1877. Name changed as above.

At present I am preparing a Catalogue of the whole of the Land Mollusca known from the Solomon Islands, New Ireland, New Britain, New Hanover, Duke of York and Admiralty Islands. A very large number of species said to have been brought from the Admiralty Islands, on the authority of Mr. H. Cumming, never did exist on them, but on the Solomons, New Britain and New Ireland.

9. LUCINA DENTATA.

Tellina dentata Wood. General Conch. p. 195, pl. 46, f. 7, 1817.

„ „ Dillwyns, Desc. Cat., Vol. 1, p. 103, 1817.

„ *divaricata* (part) Chem. Conch. Cab., VI. 134, pl. 13, fig. 129, 1782.

Lucina divaricata, Lam. (non Linn.) Anim. sans Vert. Vol. V, p. 541. 1818. Desh. 2nd ed. Vol. VI., p. 226, 1835.

Tellina dentata, Mawe's Linnean System of Conchology, p. 27, 1823.

Lucina Chemnitzii, Phil. Zeit. Spal. p. 157, 1848.

„ *arnata*, Reeve, Conch. Icon. Vol. VI., sp. 48, 1850.

„ *eburna*, Reeve, Conch. Icon. Vol. VI., sp. 49, 1850.

„ *strigilla*, Stimpson, Shells, N. E., 17, 1851.

„ *Americana*, C.B. Ad. Contrib. Conch, 243, 1852.

„ *pilula*, C.B. Ad. Contribu. Conch, 246, 1852.

„ *Lamarckii*, Dunker, Weinkauff, Journ. Conch, X, p. 315, 1862.

„ *quadrisulcata*, Orb. Voy. Amer. Merin., 584, Moll. Cuba II., 294, 394, pl. 27, f. 34, 36. Shells of South America, Brit. Mus. Cat. p. 72, 1854.

„ *Sechellensis*, Orb, Voy. Am. Merid, 384.

„ *ornatissima*, Orb. Voy. Am. Merid., 384.

- Lucina serrata*, Orb. Voy. Am. Merid., 384, Moll. Cuba. II., 295, pl. 27, f. 37, 39, 1853. Brit. Mus. Cat., p. 41, No. 496, 1854.
- „ *divaricata*, Gray (non Linn.) Dieffenbach's Travels in New Zealand, Vol. II., p. 256, 1843.
- „ *Cumingi*, Ad. and Ang. Proc. Zool. Soc., p. 446, pl. 37, f. 20, 1863. Angas, P.Z.S. p. 651, 1865, p. 192, 1877.
- „ *ornata*, Angas, P.Z.S., p. 192, 1877.
- „ *divaricata*, Chenu. (non Linn.) Manuel de Conch, tome II., p. 120, fig. 572, 1862.
- „ *ornata*, H. V. A. Adams, Genera Recent Moll. Vol. II., p. 467.
- „ *eburna*, Op. Sit. Genera Recent Moll. Vol. II., 1857.
- „ *divaricata*, (Reeve (non Linn.) Conch Icon. Vol. VI., pl. 8, species 47, 1850.
- „ *dentata*, Jay's Catalogue, p. 30, No. 669, 1850
- „ *dentata*, Wood Index, Test. Hanley's Edit. p. 29, pl. 4, fig. 88, 1856.
- „ *dentata*, Catlow and Reeve. Nomenclator, p. 26, No. 7, 1845.
- „ *dentata*, Hanley. Catal. Rec. Biv. Shells. p. 16, 1842.
- „ *divaricata*, Hutton (non Linn.) Journ. de Conch, Vol. 26, p. 51, 1878.
- „ *quadrissulcata*, Pf. in Martini and Chem. Conch. Cab. Küster's Ed. p. 268, pl. 42, fig. 1, 1869.
- „ *dentata*, Tryon Proc. Acad. Nat. Sc. Philad, p. 85, 1872.
- „ *dentata*, Tryon Jr. American Marine Conchology, p. 169, pl. 32, fig. 427, 1873.
- „ *divaricata*, Hutton (as of Lam.) Manuel of New Zealand, Mollusca, 1873, 1880.
- „ *divaricata*, Tenison Woods (non Linn.), Papers and Proc. Roy. Soc. Tas. p. 40, 1877.
- „ *dentata*, Paetel, Catalogue, p. 143, 1873.
- „ (*Divaricella*) Sp. Von Marten's Critical List of New Zealand, Molluska, p. 46, 1873.

Lucina quadrisulcata, Dunker, Index, Moll. Maris. Japonica, p. 216, 1882.

Hab.—New England to Brazil, West and South America, East Coast of Asia, Seychelles, Island of Bourbon (Tryon), Wangaroia Harbour, New Zealand, Tasmania, South Australia, Victoria; Twofold Bay, Jervis Bay, Botany Bay, Port Stephens, Port Jackson, Port Macquarie, New South Wales; Moreton Bay, Port Curtis, Port Denison, Palm Island, North east Coast of Australia; Cape York, North Australia, 7 and 8 fathoms (Chevert Expedition. (Brazier.) Also, Port Darwin and Nicol Bay, North and North-west Australia (Brazier.)

This species has a very wide range over the earth's surface, but it does not differ in sculpture, although a number of authorities have constantly confused the little *Tellina* (*Lucina*) *divaricata*, Linneus from the Mediterranean Sea, with the *Lacina divaricata*. Lamarck from the West Indies, which is the *dentata* of Wood. Deshayes in the second edition of Lamarck's Anim. sans Vert. 1835, does not even mention *dentata*. Jay in his Catalogue is also confused; it gives *divaricata*, Lam. from the Mediterranean then makes *dentata*, Wood, a variety from St. Jago de Cuba, West Indies. There is not the least doubt that Jay had all West Indian specimens before him, the small size of the Linnean *divaricata* of the English Coast, and the Mediterranean cannot in any way get confused with the West Indian, New Zealand, and Australian species, so well known as *dentata*, for the past 60 years. Professor C. B. Adams in his Contributions to Conchology, Vol. 1, p. 243, 1852, re-names the species from West Indian examples under the name of *Lucina Americana*, then he goes on to say, "We wish to call the attention of *geologists* and others, who have believed in the great geological antiquity and the wide geographical distribution of the so-called *L. divaricata*, to the just remark of Phillippi (Zeit. f. Mal. 1848, p. 151.)" "Nomine *L. divaricatæ* plures species confuse, omnes *divaricatim striatæ*." "When the types have been properly distinguished, we believe they will be found to have the ordinary restriction both in time and area. The Linnæan name should be reserved for the Mediterranean species, since Linnæus assigns his shell to a Mediterranean habitat."

Professor Von Marten's in his Critical List of New Zealand Mollusca, p. 46, 1873, distinctly says that *divaricata* is a collective name for several species; the true *divaricata* of Linné is a species of the Mediterranean Sea. I now quote Mr. Sylvanus Hanley from his *Ipsa Linnæi Conchylia*, p. 44, 1855. "The locality being here authenticated by the name of the authority for it, becomes of importance. The only Mediterranean species that will at all agree with the description in the "System" is the *Lucina*, which, originally termed *commutata* by Phillippi, (Moll. Sicil. Vol. 1, pl. 3, f. 15), was afterwards recognised by him for the true Linnean *divaricata*. That illustrious naturalist justly remarks, that "magnitudine pisigibba-striæ tenuissimæ" and "Habitat in M. Mediterraneo, Logie," clearly point to the little and delicately sculptured European shell, rather than to the coarser, larger, and now commoner West Indian species, which usurps the name in almost every collection." "As corroborative of these convincing arguments (not that our author would have scrupled to unite the two species), it may be mentioned that the figures of the larger species in the works of Bonanni, Lister, and Petiver, books habitually consulted by Linnæus, were passed over in silence by him."

Pfeiffer in Martini and Chemnitz Conch. Cab., second edition by Küster, p. 268, 1869, does not even mention Wood's name *dentata*, but makes use of a very recent specific name *quadrisulcata*, Orb. *Lucina dentata*, Wood must stand as a genuine species, its legion of synonyms are a disgrace to science, and should never have been created, if authors had paid a little more attention to the strict rules of priority.

The Rev. J. E. Tenison-Woods, in his Census of Tasmanian Marine Shells, Proceedings Royal Society Tasmania, p. 30, 1877, informs us that *Lucina divaricata*, Linn. was first found in the Mediterranean, and until lately, when found elsewhere, was thought to be another species. The opinion that Mr. Woods quotes, is not the opinion of Von Martens but his own. The shell quoted by Mr. Woods from Tasmania, is the *Lucina divaricata* Lam., and to please the egotism of Mr. Cuming, Messrs. Adams

and Angas re-named it *Lucina Cumingii*, from South Australian examples. Pætel in his Catalogue, p. 143, 1873, gives it *Lucina dentata*, New Zealand.

I here quote from the Proceedings of the Academy of Natural Sciences of Philadelphia, p. 85, 1872, in Mr. George W. Tryon, Jr.'s own words: "It is very curious to observe that most of the above distinguished authors finding that the West Indian *divaricata* of Lamarck, Gmelin, and Chemnitz is distinct from the European *divaricata* of Linn., have each immediately re-christened the former, without troubling themselves to ascertain whether any one else had previously made the same discovery. To this carelessness, and to the *insane* desire to describe species, are to be ascribed the terrors of the science to the novitiate, who in nine cases out of ten is frightened at the very threshold by an heterogeneous mass of a hundred thousand names, representing probably, not more than one-fifth that number of species. Long and familiarly known to Conchologists as this species is, they have permitted nearly all of the above synonyms to stand as distinct species. The geographical range is great, but well established by numerous authorities."

10. MODIOLARIA BARBATA.

Lithodomus barbatus, Reeve, Conch. Icon., vol. 10, plate 5, sp. 27, 1858.

Modiolaria barbata, Angas, Proc. Zool. Soc., p. 11, pl. 44, fig. 12, 1867.

Crenella barbata, Angas, P.Z.S., p. 871, 1878.

Hab.—Sydney, in mud at the depth of six fathoms (*Strange*). Botany Bay, New South Wales, Port Jackson, from 2 feet to 12, and 18 fathoms. Port Stephens, New South Wales, 8-10 fathoms (*Brazier*). St. Vincent's Gulf, South Australia (*Professor Tate*).

This pretty little *Modiolaria*, is very common in some parts of Port Jackson, especially under George's Head in 13 fathoms, found attached to a sponge, and in the crevices of masses of large *Ascidians*, and at half tide, under the large roots of *Fucus* at Shark Island, Vacluse, and Watson's Bay, also outside Sydney Heads, at Bondi and Coogee Bay on the south. I see no difference in the species

described by Reeve in 1858, as *Lithodomus barbatus*, and *Modiolaria barbata*, described by Angas in 1867.

11. TAPES POLITA.

Tapes polita, Sowerby, Thes. Conch. vol. ii., p. 682, pl. 145, fig. 15, 16, 1852. Deshayes in Cat. Conch. of Biv. Shells in Brit. Mus., p. 172, No. 37, 1853. *Tapes inflata*, Desh. Proc. Zool. Soc., p. 8, pl. 19, fig 3; Conch. Brit. Mus., p. 162, No. 6.

Tapes polita, H. and A. Ad. Rec. Moll., vol. ii., p. 435, 1857.

„ (*Pullastra*) *inflata*, H. and A. Ad., vol. ii., p. 436.

„ (*Textrix*) *polita*, Romer, Malk. Blat., p. 29, No. 13, 1864.

Tapes polita (*Textrix*) *inflata*, Romer, Malk. Blat., p. 29, No. 16, 1864.

Venus inflata, Pfeiffer in Conch. Cab., Küster ed. p. 210; p. 34. fig. 4, 1869.

Hab.—Port Jackson and Port Stephens, New South Wales, 8-10 fathom mud (Brazier.)

When Mr. Sowerby described and figured this species in the Thesaurus Conchyliarum, there was only one specimen known, found by the late Mr. Strange, in mud at a depth of six fathoms at Sydney. Mr. Cuming appears to have received another so-called species from Ceylon, but I very much doubt the specimen or specimens being finer and larger than *polita*. Mr. Deshayes describes it under the name of *Tapes inflata*, without ever comparing Sowerby's species with it; in Cuming's collection I have hundreds of specimens of *polita*, Sowerby, and *inflata*, Desh. in all stages of growth, that is half an inch, one inch, one inch and a-half, two inches, and three inches long, and broad in proportion near the ventral margin, there are two or three very slight riblets, these riblets are seen in nearly all specimen of *polita*, when the animal enlarges the valves, the riblets become ribs and get broader; of the *inflata* form, when fresh, the inside under the umbones is always orange, from the very youngest specimens of *polita* up to the psuedo species called *inflata*.

Pfeiffer in Martini and Chem. Conch. Cab., Küster edition, 1869, only figures Deshayes *F. inflata*.